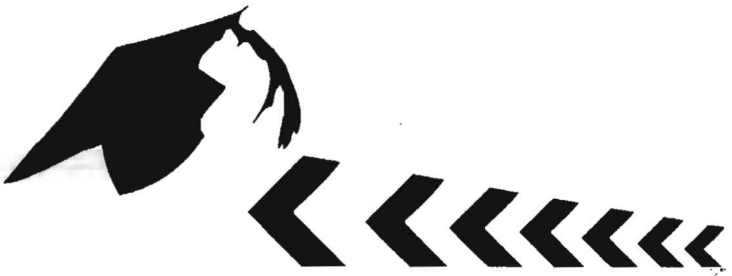
iNSiGHT

@unimas

Teaching & Learning Bulletin

volume six 2005



Preparing UNIMAS Graduates for the Job Market

iNSiGHT @unimas

Teaching & Learning Bulletin

Contents

Centre for Applied Learning and Multimedia,
Universiti Malaysia Sarawak,
94300 Kota Samarahan
Sarawak.
Tel: 082 671 000
Fax: 082 671 579

Everyone is invited to contribute articles, reviews, events and news on teaching-learning issues. All contributions must be submitted to Centre for Applied Learning and Multimedia(CALM), UNIMAS.

You can also reach this newsletter online at:
www.unimas.my/centres/calm/insite6

www.unimas.my/centres/calm

ISSN 1823-2396

introductorynotes

Much publicity has been given to the problem of unemployment among graduates in Malaysia. It was highlighted in those reports that presently there are as many as 18,000 unemployed graduates. This has caused many to wonder what caused the situation. Some said our graduates are very choosy. Others blamed on their poor command of the English language. Others argued that they lack important skills such as problem-solving and communication. Many stressed that they simply do not have the "capability factor" to compete in the job market.

In conjunction with the 9th convocation of Unimas, we dedicate this issue of Insight to our graduates who will enter the job market. Thus, the theme "Preparing Unimas Graduates for the Job Market is aptly appropriate.

The basic challenge facing any academic institutions is to foster academic excellence and interpersonal competence. At Unimas, we are proud to say that we are doing all we can to inculcate skills and attitudes that will enhance the personal and professional outlook of our graduates, and providing them with the competitive edge to survive in the constantly changing workplace.

We are committed to a philosophy of education for capability and lifelong learning. In keeping up with this philosophy, we have integrated various core components into our undergraduate academic curriculum. Some of these core components include industrial training, generic courses, and problem-based learning. We believe that they are very important to prepare our graduates to land a job and progress in their chosen careers. We are also confident that through this academic curriculum, our graduates will develop the "capability factor" needed to compete and confront the challenges that are inherent in today's fast changing work environment.

One of the ways to prepare our graduates for the job market is through the industrial training. It is through the industrial training that they are exposed to the real workplace environment, where they learn the trade and gain a working experience. It is where that they are given the opportunity to apply what they have learned in the classroom. The comments and feedbacks that are given by the organizations regarding the performance of our students are used to improve our academic curriculum.

Besides undergoing industrial training, our students take generic courses such as English, public speaking, information technology, interpersonal relations, entrepreneurship, and the like. We believe that our graduates have benefited from the English language course, as they have become proficient in written and conversation English. Also, from these courses they have enhanced their capability to be autonomous, self-confident in taking effective and appropriate action, and to live and work effectively with others. In addition, the problem-based learning approach that we use in delivering some of our courses gives our students an opportunity to learn how to solve real-life problems that they may encounter in their future job. Lastly, it is from the dedication and commitment given by our lecturers who continuously motivate and mentor our students on what it takes to succeed, that they have learnt the most.

In closing, I would like to thank those who have contributed articles related with the theme of this issue of Insight. I hope that these articles could inspire our graduates to become well-mannered, positive, independent, motivated, competitive and brave to tackle the challenges in the workplace.

Prof Peter Songan
Dean CALM

text • inspiration
Maclean Patrick Sibat | psmaclean@calm.unimas.my

Leaping out of the Unemployment Line

It is a sad state of affairs when so many of Malaysian graduates are unemployed. The statistics are grim. Of the **66,000** identified unemployed graduates between **October and December 2004**, the majority are from the fields of Business Administration (19,000), Computer & IT (9,500), Engineering (7,500).

There were **80,000** unemployed graduates nationwide *(Source: NST February 22, 2005 – Public Services Commission)* as reported by the Public Services Commission in February 2005. However, this number was reduced to **18,072** *(Source: NST May 18, 2005 p.20)* when a report was submitted to the Dewan Rakyat by Deputy Human Resources Minister, Datuk Abdul Rahman Bakar.

According to Datuk Abdul Rahman Bakar, the undergraduates do not want to work in the agricultural, construction and manufacturing sectors as such sectors are considered "non-glamorous".

But does this fully address the question, "Why are so many of our undergraduates un-employed?"

The reply from the industry is, "They are **un-employable**."

JobStreet, a Malaysian employment agency, conducted a survey of 3300 human resource personnel and bosses from March 29-31 2005 via email to find out the factors for graduate unemployment. The factors are:

Weak English	56%
Bad social etiquette	36%
Demand too much pay	32%
Degrees not relevant	30%
Fresh grads too choosy	23%
No vacancies	14%

Interestingly, heading the list of the survey findings are weak English and bad social etiquette. Our graduates are not employed because they are not intelligent, but rather because most of them lack soft-skills that have clearly been neglected in our educational systems.

Industry **dictates our value as workers not just by paper qualifications but also by our aptitudes and capabilities in performing our given tasks.** Such capabilities may not be those that are directly connected to our paper qualifications, rather some may just be natural talents.

Another avenue for employment is for graduates to compete with diploma holders for government jobs under the "one-step lower" policy. Such policies have always been in place in order to reduce unemployment. The only drawback for the "one-step lower" policy is that graduates will be paid at the diploma level and they cannot demand a higher salary since the salary scale is fixed.

Safe to say, gone are the days when one solely trains oneself to be a specialist in one skill. The work environment demands are different and far from what we expect. The fluid and constantly changing environment keeps the employment landscape evolving, driven by profit reaping activities which in turn drive the Malaysian economy.

Malaysia is a growing economy, ranked **16th** in world competitiveness out of a pool of 60 economies *(Source: Star February 18, 2005 – Ranking by Institute for Management Development (IMD)* based in Switzerland). As Malaysia moves with the changing times, we will need to improve on productivity by enhancing education and training which in turn will provide the industry with skilled workers of the highest caliber.

There is nothing wrong in being a specialist in any field. The only condition that is needed to be fulfilled in order to reap the monetary reward for such specialization *(short from winning the lottery)* is that one will need to occupy the zenith of the **Niche-Pyramid**.

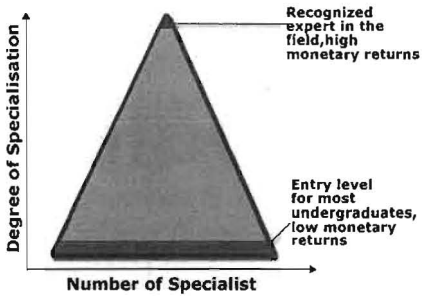


Figure 1: Niche Pyramid

The journey to occupying the zenith of this pyramid is years in the making. The competition is tough and at times ruthless. Undergraduates enter at the lower end of the pyramid and spend years "feeling" their way to the top.

But there is a short-cut and this only happens when an individual defines the market or creates the market /industry. For example, Bill Gates who basically created the commercial software industry. Microsoft sits on the zenith of the Software Pyramid which it created and defined. Dell, which pioneered the direct-selling of desktop computers, sits on the Computer Direct Sale Pyramid and Astro, which spearheads the cable television market in Malaysia, sits on the Malaysian Cable TV Pyramid.

Another industry view is that **the work place is not a training center**. One should come into the organization fully prepared and equipped to perform the tasks at hand. A multi-skilled employee is far valuable as an organizational asset and more economically viable than employing several individuals to perform singular tasks. The training or education of the employee should have been taken care off at the university level.

In order to be high-valued employees, UNIMAS undergraduates need to be both skill-diversed and highly motivated to perform. Their ability to secure employment now and in the future depend largely on their degree of **skill diversification**.

Skill diversification suggests that one is skilled at multiple disciplines. Paper qualification at times is the requirement to attend the interview and to secure the post. But how well you perform in any given task depends on skills that you may not have studied for.

Thus, instead of having one Niche-Pyramid, an undergraduate may have several Niche-Pyramids in various fields with various degrees of specialization within their portfolio. This widens the opportunities for the undergraduate to secure employment.

It also allows the potential employer the choice of placing the undergraduate where the need is evident within the organization. The ability to decide is a great draw for any employer when it comes to recruiting new personnel.

Skill diversification also opens up the opportunity for the under-graduate to venture out into new and innovative businesses. Why be employed when you can be your own boss in a market you create? **Skill diversification** allows one to market one's skills in areas which may not have been within the confines of their original educational background.

What then is the role of the university?

UNIMAS should seriously look at integrating skill building programs as part of a student's education. We should seriously take note of, not only at what industry is driving the economy but also, what type of person the industry is looking for.

We can start by helping student identifies their **Unique Selling Proposition (USP).** A USP is why the customer should choose you instead of the others. A USP is what makes you special or better than the rest. USPs could be talents, hobbies or natural abilities that could be showcased or marketed. Once identified, the USPs can then be cultivated alongside formal undergraduate education. For example, one may be educated as a software programmer and who is naturally an eloquent speaker. Such skills may allow this person to hold a marketing post or be a trainer or make him/her a better programmer than the rest. Being a confident, eloquent speaker would place this programmer on the top-ten list of any software company.

Once a USP(s) is identified, then **a niche pyramid can be defined.** This is the point where the graduate actually seeks out a niche pyramid to fit into. Just being a programmer is too broad a scope for a niche pyramid. It needs to be narrowed down to what is deemed valuable by the industry, for example, a programmer for network games. By the way, according to a report by IDC China and China Game Publishers' Association, China's online gaming market revenue reached **USD297.9 million in 2004**, an increase of **47.9%** over the previous year *(Source: itfacts.biz April 5, 2005)*.

By going through the above exercise, individuals can prepare a clear and systematic plan to place them in a more marketable position as opposed to seeking employment by a shoot-by-night method that is leveraging on how lucky or fortunate they are. Using the above approach, one can plan to minimize the risk of not being employed by optimizing their self-exposure in areas that will generate the best result. As a university, UNIMAS is capable of providing the environment that would realize the true potential of any individual. What is needed is a systematic and planned approach to not just defining the problem but also providing the best approach possible to overcome it. UNIMAS needs to take to heart the cause to see that our undergraduates **leap out of the unemployment line**. We are obligated to equip them for the challenges ahead and not to see them as just another statistic in the unemployment figures. It falls upon UNIMAS to build up the student not only in their formal choice of expertise but also to identify potential within them. Such potential has room to grow. There are many Malaysians who are known not by their formal training but by what they become. One of them in particular stands out – ***Tun Dr. Mahathir Mohamad*** who is a doctor by training and profession yet he elevated Malaysia to the forefront as her Prime Minister.

text • inspiration
Dr.Edmund Sim | uhsim@frst.unimas.my

Dilemma of Producing Graduates for the Job Market

Ten to fifteen years ago when a student stepped out of any Malaysian public university with a degree certificate, he/she was virtually stepping into the "foyer" of employment opportunities. Hence, the pursuit of Masters or Doctoral degrees is often left to the rare breeds of "fanatical" learners. Today, a majority of graduates return to academia on the pretext of postgraduate pursuits after futile attempts at the job market.

Is the job market becoming increasing restrictive and limited, or are our graduates actually unmarketable nowadays? The former scenario is best left to the employers (industrial, private and public sectors) to comment. From my personal perspectives and experiences as a university lecturer, I shall discuss the latter predicament and attempt to address issues on the dilemma of producing graduates for the job market.

When one discusses the marketability of university graduates, he/she must take into account the academic and competency relevance. Academic relevance in essence is reflected in the validity of the teaching and learning processes at tertiary educational institutions. Competency relevance means the inherent learning aptitude and character development of an individual during the process of university education.

In my opinion, academic relevance concerns the nature and content of taught courses. Quality of instructors, notwithstanding, the course curricula in public universities are often a matter of tussle between the academic expertise and the policies/decisions of regulating governmental agencies. Academics based their decisions on scholarly platforms whereas governmental agencies often rely on prevailing political agenda. One good example is the preference for fundamental subjects by academics, of which is seen as contrary to the applied and commercial emphasis of the government.

Thus, the debatable motion is that applied degree programmes better equip fresh university graduates for the job market.

An academic from the old school of thoughts would staunchly defend that knowledge precedes skill acquisition. He/she would argue that this pattern of academic pursuit provides the theoretical background necessary to facilitate proper understanding and application of practical skills learnt. After all, one can easily train a monkey to ride a bicycle – but it is man who knows the concept of wheel and motion, and how to put the concept into difficult mode of usage. On the other hand, governmental policy that is often driven by the desires of industrial and commercial "stakeholders," attributes the lack of immediate competency in applied skills of graduates as an unattractive factor for employers. Of course, who needs a physicist who can only talk about the theories of motion and energy conversion, when it is the mechanic whom we want to repair the damaged engine now.

The compromise in this matter is usually in having components of fundamental and applied subjects taught in each degree programme. The difficulty would come from allocating weightage of each component that will be agreeable to all.

An additional complexity may lie in the ambiguity of most public university on their preference to be known as awarding applied or fundamental degree programmes. Established universities tend to use their tradition of advancing academia via fundamental disciplines as a selling point. Newer universities often resort to offering applied degree programmes to avoid competition with their established counterpart. In this sense, it is seen as an advantageous move (by young universities) to advance from a platform that is not yet conquered by the older universities. However, in reality, neither the established nor the newer universities would claim with absolution to their focuses on awarding applied or fundamental degree programmes. The reason to this is unclear. Perhaps, it is due to the

local culture of subtlety and neutrality on issues that have involvement with government and politics. Amidst this confusion, the uncertainty of whether applied or fundamental degree programmes is more suited for producing marketable graduates remains unresolved.

In the forgone era of Malaysian tertiary education where public universities were regarded as "Ivory Towers", successful completion of a degree concomitantly results in positive character development. This character development is translated as the behaviours of acute learning abilities, lifelong learning desires, and a committed responsibility in workplace and towards the nation. A simple survey on the opinions of academics and employers today would give us the notion that the assumption of positive learning behaviour in fresh graduates is flawed. Therefore, we ask ourselves, what has gone wrong in our present system of education, as far as inculcating the learning spirit of a competent graduate?

A popular response to this would be the general decline in the standard of education. This general decline can be observed at two stages, that is the pre-university and university stages. However, on grounds of familiarity, I would limit my discussion to the university situation. From my point of view, the declining standard can be explained at two levels, (1) the lowered academic entry requirement and (2) the unchecked flexibility of evaluation standards that enabled easier passes in examination. Once the entry and exit standards are compromised, there is very little intrinsic motivation for university students to adopt positive learning personality. After all, it is not hard to get a place in university, and once in, very little diligence is required to fulfil graduating standards. The lack of a healthy competition system for a place in university, coupled with a lenient monitoring system for granting of degree means production of graduates that lack the competency and drive to gain the necessary competency required by employers. What is the stand of most universities in this? Or, do universities really have the choice to make a stand? One must remember that higher university entry and exit statistics provides the points to substantiate progressive national literacy policy. Not to mention also points for advertising ample availability of presumed professional workforce. However, in the case of the nation of Taiwan, rapid growth in numbers of universities has resulted in a hundred percent entry success of high school graduates into tertiary education. This has plunged the country into a dilemma on the kind of graduates that is leaving the universities. Quantity may not always mean quality.

Many would also claim that the degrading learning behaviour of local graduates could be attributed to the lack of proficiency in the *English language* - a language still known for its universal applicability in knowledge and skill acquisition

Many would also claim that the degrading learning behaviour of local graduates could be attributed to the lack of proficiency in the English language - a language still known for its universal applicability in knowledge and skill acquisition. Do we see a realization of the need to rectify this situation via the re-adoption of English as medium of instruction for Science and Maths subjects in schools? If so, isn't it indeed fortunate that the use of English has never been totally abandoned in the teaching and learning of disciplines of Science and Technology at public universities before the re-adoption policy? In a simple survey done *(by me)* on students of the Biotechnology programme at UNIMAS, about 40% admitted that they have problems coping with the English language. Surprisingly, a majority of the students (more than 80%) preferred English as a medium of instruction at university despite the fact that it is not a language they are proficient in.

So, although there is the popular assumption by employers that local graduates lack proficiency in English (hence, the lack of competency in the commercial and industrial sectors), the learning behaviour of students at university, as far as using English language, is quite encouraging. At least this determination is evident in UNIMAS biotechnology students. Would the situation be the same if the survey was carried out on the whole university?

At the end of the day, whether it is academic ideals that should thrive in universities or that public policies should dictate the nature of producing graduates, the seemingly pragmatic move would be to strike a balance in both. This is easier said than done, of course. There is often no balance in any move to strike a balance. The real world is about coping with imbalances. What then is the actual solution to this? Perhaps there is no answer. In the context of producing graduates for the job market, the big question perhaps is whether as academics, university lecturers should honour their ideals or as public servants, they should not bite the hand that feeds.

INDUSTRIALTraining:

Preparing Graduates for Future Challenges

text • inspiration
Fathan Soetrisno | sfathan@feb.unimas.my

Industrial training is a compulsory course for students in the Faculty of Economics and Business. All second year students are required to take the course during the inter-session of the academic calendar year as a condition for them to graduate. Students who have successfully completed the course will be graded either with a "Passed" or a "Failed," depending on their report submission and performance during the training. The period of the industrial training usually lasted between 6 to 8 weeks.

The purpose of the industrial training is to give an opportunity for the private and public sector organizations to realize the potential and capability of our UNIMAS graduates, as well as to help shape our students to become outstanding graduates – positive thinkers, innovative, excellent in communicating and competent. Industrial training provides an excellent exposure to the students to be involved in problem-solving activities and in dealing with challenges in the job market. Hence, this course builds a positive attitude among students towards job and encourage them to assess their potential for a permanent job opportunities in the organizations that they have been attached to. Apart from that, industrial training provides a good learning experience to the students to learn the technique of problem solving in an actual work environment, and the ability to contribute creative ideas to the organization. Also, this will give the opportunity for the organizations to train and to determine the potential of our local graduates *(Buku Panduan Pelajar FEB Sesi 2005/2006)*.

In 2004, the faculty had secured 184 placements for the Economics and Business students, and for this year, a total of 255 students have enrolled in this course *(Figure 1)*. Of this number, 124 students were from the Economics program and 131 were from the Business program.

Getting placement for students with different programs and specializations has become a major challenge to the faculty. The students have

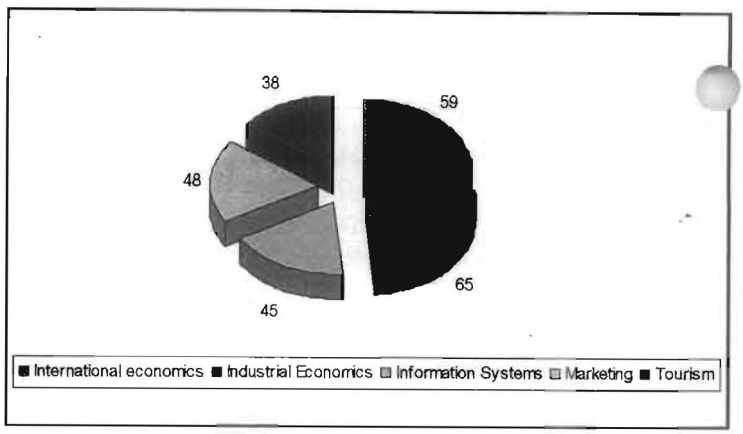


Figure 1 Industrial Training Placement for 2005

to compete among different faculties and universities in order to gain limited offers from the organizations. Hence, creating a good rapport and developing a long-term relationship with the organizations is an excellent approach and strategy in obtaining the best placement for our students. Students are expected to follow the rules and regulations of the organization while performing the industrial training. Supervisors of the organization will monitor closely their daily job activities. Students will be trained accordingly based on the needs of the organization and the capability of the student. Upon the completion of the course, each student is requested to submit a full report according to the deadline given. The students' employers or supervisors are also asked to submit their feedback and comments directly to the faculty. *Table 1* is a summary of the supervisors' and students' comments during the industrial training placement.

The perception of the society towards our graduates has become a major concern to many parties. Students are seen as non-competitive, dependent, lack of creativity and poor in negotiation and communication skills. They are seen as not being able to meet the demand, needs and expectations of the current business world. In fact, some organizations insisted that graduates be retrained before joining their organizations.

Table 1 Summary of the Supervisors' and Students' Comments

Supervisor's view (Strength)	Supervisor's view (Room for improvement)	Students' view (Strength)	Students' view (Room for improvement)
Our students have positive attitude, are very receptive, presentable, helpful and disciplined. Only few commented that our students are proactive.	Our students are very shy and reserved. Most of them lack communication skill especially in the English language.	Students enjoy the real working environment and experience. Most of them think that the program is very challenging.	Students are shy to ask questions on what ought to be learned. Some of them are reserved about the whole thing. They also feel that they have some communication problem.
Our students are hardworking and willing to learn new things and accept criticisms. Some also have commented that they are punctual when it comes to attendance and work assignment.	Our students are not well equipped with hands on experience in the class. This is shown from the way they do things in the organizations.	Students are happy since the training provides them with 'real-life' exposure and knowledge.	The environment builds their self- confidence to interact with various people. Lack of confidence especially when communicating in the English language. They only speak up when a question is asked.
Most of our students have good interpersonal skills and can adapt well to new environment. Our students are fast learner and able to complete their jobs satisfactorily	Our students need to be more confident and enthusiastic especially in coming up with new creative and innovative ideas. They are quite dependent with their supervisor.	Students are comfortable with the new working environment. All of them agree that they learn a lot, especially in communication and interaction skill.	

Therefore, the implementation of industrial training course should be seen as part of our strategy in overcoming this dilemma. The course helps us to produce more fresh graduates who are capable and are able to meet the needs of industries. The idea of implementing this course is to ensure that our students will receive a good exposure, knowledge and experience before they can work in a real business environment. We hope that this course will provide benefits to both parties; the organization and the student. The organization involved will develop a strong relationship with the university, will become part of the human resource center in developing the future workforce of the organization, and will gain up-to-date knowledge from the students towards their benefits. On the other hand, students will be able to gain and develop their skills in their job, to develop skill for networking, and to practice their academic knowledge in the real world *(Buku Panduan Pelajar FEB Sesi 2005/2006)*.

Indeed, our faculty and university should seriously consider any comments and feedback given by the organizations to ensure that our students will be highly capable and will be able to meet those challenges. Furthermore, the feedback is significant in highlighting an area that can be improved, while at the same time can strengthen the curriculum of our academic programs. We shall continuously identify the needs of the organizations since this approach allows us to realize the importance of producing more high quality UNIMAS graduates in the near future.

Industrial Placement:

What **Students** Might **Get** before They **Leave UNIMAS**?

text • Inspiration
Siti Haslina Hussin | *hhaslina@fss.unimas.my*

"She is picking up her job quickly. She can be recommended to work in our organization"
– Charisma Lines Sdn. Bhd ,Kelang

"Pelajar berbakat untuk menjadi penyiar yang baik"
– Ketua Unit Latihan danKerjaya, RTM, Kuala Lumpur

"Perlu lebih bersedia dari segi emosi dalam menangani masalah persekitaran semasa melaksanakan tugas"
– Pegawai Perhubungan Awam, Jabatan Muzium Sarawak

"Beliau perlu lebih detail, alert kerana beliau sering membuat kesilapan-kesilapan kecil berulang kali. Perlu lebih cekap "
– Pegawai Tadbir, Bahagian Perhubungan Awam, DBKU

These are some of the comments I received from supervisors of various organizations where our students did their industrial placement during the inter-session. Of course, some saw our students as impressive who have the potential to be successful in their future career. But, there are also feedback that indicate that some of our students lack the skills and ability to succeed in the job market, unless they change.

Whatever it is, the most important matter here is the fact that we give the opportunity to our students to explore and experience the working world, though for only eight weeks. Well, some of you might say this; "Oh, what's the point?! The students are put in the office and what they do is simply photocopying, or faxing, or even worse making and serving coffee for others, nothing but irrelevant job, right?" Not exactly. Think of it like this. When we send our students to any organization, we're actually providing them a chance to get hands on experience in an office setting and become part of the team. No matter how small their contribution to the organization, they will actually gain insight into what working life is like. They might be asked to draft letters, write speeches, assist the marketing team, or even learn behind the scene activities of an organization.

Furthermore, by working in an office setting, they can put to work all the knowledge they have learned in the classroom. They can demonstrate their skills and creativity in a practical situation. At the same time, they will gain valuable knowledge in their field of study that they might not get from the classroom setting.

By meeting the expectations of the organizatio the students have the opportunity to gain self-confidence. They begin to realize their strengths and weaknesses whilst being supervised by their employer. Besides, they might improve their oral and written communication and leadership skills. Thanks to the working experience, they have the chance to interact with diverse people. They might meet politicians, police offic s, celebrities, lawyers, CEOs, the general public and even other interns from other universities. While each person might be different in language, culture, personality and profession, thus, interacting with people will teach them more about the real world.

Industrial Placement is really one of the best ways for students to get a real world experience

Finally, let's think of industrial placement as an opening for students to start their careers. Perhaps, the networking and contacts they have made during their short industrial placement period might be very useful to them when they look for jobs after graduating. Above all, industrial placement is really one of the best ways for students to get a real world experience, because it serves as a crucial preparation for the working life.

Technopreneurship Program in the Faculty of Computer Science and Information Technology, UNIMAS

text • inspiration
Dayang Hanani Abang Ibrahim | hananii@fit.unimas.my

Unemployment of fresh graduates has been a hot issue in the mass media for the pass few months. There are many contributing factors to the unemployment issue such as lack of communication skill, mismatch between training programmes and industry needs, and flaws in the education system.

In this new millennium, we need to transform ourselves into a knowledge-based economy, and to build world-class companies and solutions that will spur growth and demand in the period of rapid change in technological advancement and innovation. Malaysia needs to build up its intellectual capital in order to succeed in this newly competitive knowledge base economy. As evident from developed nations, high technology and technopreneurial skills are the driving forces in many of the prosperous economies. It is imperative that Malaysians are not only nurturing a culture of science and innovation, but also technopreneurship. Technopreneurship play an important role and is a critical success factor for any high-tech ventures.

Malaysian government plays a vital role in promoting and encouraging technopreneurship. The government has been actively promoting technopreneurial culture by planting seeds required for new ventures, preparing technopreneurs through technopreneurship education, providing the infrastructure to enable and support new start-ups and ventures. The Multimedia Development Corporation (MDC) provides programs for graduates from being unemployed to being an employer and a technology entrepreneur. One of the programs is *Excite The Entreprenuer* (E2), an education initiative jointly headed by Technopreneurs Association of Malaysia(TeAM)'s Technopreneur Development Committee and Malaysia Venture Capital Management Bhd (Mavcap). E2 aims at providing awareness and promoting entrepreneurship or technopreneurship amongst local university and also to change the mindset of tertiary students and encourage them to consider pursuing an alternative career in entrepreneurship or technopreneurship.

Universities also play a major role in nurturing Malaysians in this line. In Unimas, the Faculty of Computer Science and Information Technologies (FCSIT) has taken the first vital step by introducing technopreneurship course for its undergraduates. This course provides a foundation to prepare undergraduates to become technopreneurs. This course exposes the students to the skills required to start IT based business, and what resources are available to assist the students in developing the business. Successful technopreneurs and venture professionals from multi discipline industries are invited to share their experiences with the undergraduates. Therefore, the course equip undergraduates with the knowledge of the processes and mechanisms by which new ideas can be commercialised in the market, whether within an organisation or as an independent technopreneur.

D'Synergy Sdn Bhd is one of the success stories among FCSIT graduates. Incorporated in 2001, D'Synergy provides IT solutions specifically in software development for web based, client-server and standalone applications, e-commerce, web site/home page development as well as the supply of computer hardware, peripherals, networking and close circuit television system known as CCTV. Faisal Haji Mustafa and his wife Noraisah Abdul Rahman are examples of technopreneurs. Both had worked before in other companies as programmer and system analyst. Later, both realised there are plenty of opportunities available, and decided to start their own company, D'Synergy. They have gone through the ups and downs in the business world, but never gave up. They are confident they will beat all the odds and succeed. With the success of Faisal and Noraisah, it is hope that we could produce more technopreneurs. Starting as young technopreneurs, they can become successful and they can contribute back to university through mentoring others or setting up foundations to build more opportunities for other graduates.

Participation from all sectors is required to encourage technopreneurship. Many people still could not see the importance/potential of this area to the national economic success. In fact, technopreneurship is one of the major driving forces for long-run sustainable competitive advantage. These technopreneurs will help run the country's economic machinery by driving economic development. They are building strong, innovative and dynamic enterprises that in turn will provide employment opportunities to others.

Budi Bahasa Budaya Kita

text • Inspiration
Dr. Oei Hong Lim | oei@fss.unimas.my

As a lecturer of ten years, the topic of preparing university graduates for the job market is close to my heart. I spend time and effort to convey knowledge and skills to my students with the sincere hope that they can make a significant contribution to society. I am therefore grateful to have this opportunity to share my thoughts on this topic.

Recently, a student acted rudely to me during a discussion of a disagreement. This incident set me thinking about the importance of manners and attitudes to complement the knowledge and skills that students learn in academia.

There have been many times that I myself do not agree with my colleagues, my direct superiors, or with my own professors while I was still a student. We argue and discuss an issue, but rudeness was not in the picture. As a matter of politeness and graciousness, one should restrict oneself to an honorable discussion. When one disagrees with one's superior, one is allowed to be honest but never to be rude. I agree that in academia we must train students to discuss matters, to encourage them to think critically about issues, and to be vocal in expressing their arguments. But all of these should be conducted in a pleasant manner. No matter how much knowledge and skills we equip the students with, in the end it is the attitude that matters when students finish their studies and apply for jobs. Why is this so?

In most cases an employer has to re-train a new graduate for a job anyway, and hence, academic qualification alone is not the deciding factor in the choice of the candidate for the job. There are many other applicants with similar academic qualifications competing for the job. What an employer usually emphasizes is the candidate's attitude. How does he/she present him or herself? How does he/she conduct a conversation? How does he/she sit on a chair? Slumped down? How does he/she react when challenged? Up in arms? Mute? The list of questions continues.

To prepare UNIMAS graduates for the job market is no an easy task. It is not simply a matter of guiding students to pass the courses that are required for graduation. It is more than that. Getting a degree is indeed a proud milestone in one's life, but the way to pursue a career in life is still a long and hard way. And as previously mentioned, knowledge and skills alone may not be adequate to secure a job in the current job market. Therefore, it is of utmost importance that students learn to build a correct attitude and character while at UNIMAS. This does not mean that students have to be afraid and anxious of their lecturers. Nor does it mean that the students have to look up to their lecturers. It simply means, though, that students are aware of their behavior. I like to emphasize that there is nothing to be snooty about in being a student or a lecturer for that matter. Both students and lecturers have a symbiotic relationship. Students need lecturers to guide them in gaining knowledge, but lecturers need students in order to be a lecturer.

In the footsteps of our Prime Minister, YAB Dato' Seri Abdullah Ahmad Badawi, I would like all of us to uphold **"Budi Bahasa Budaya Kita"**. This is not simply a slogan, but an important message that students and lecturers alike must implement in their daily lives. I would like to suggest that all students be reminded about their attitudes and manners as a student and as a person in general. Hopefully, this will contribute to a better preparation for the job market.

text • inspiration

Dr. Andrew R.H.Rigit &
Dr. AzhailiBaharun

arigit@feng.unimas.my
bazhaili@feng.unimas.my

Project Management for Engineering Graduates: Putting Soft-skills into Use

This issue of Insight is dedicated to UNIMAS's educators in recognition of their efforts for preparing the students before graduating. As such, I was requested to contribute an article on how the educators in the engineering faculty are preparing their graduates. The request promptly reminded me of a couple of articles on the importance of project management soft-skills which I read whilst preparing for my professional interview with the Institution of Engineers (IEM) last March, and a paradigm shift on engineering education currently taking place in the faculty. Thus, I have also invited Dr. Azhaili Baharun, Deputy Dean *(Academic and Internationalization)* of the Faculty of Engineering to co-write this article.

The integration of project management skills into a university's engineering curriculum offers one solution to train and prepare students with the necessary transferable hard *(i.e. technical)* and soft skills *(i.e. non-technical)* to go from the classroom to the workplace *(Lee and Tan, 2003, and Johari et al, 2004)*. Engineering graduates possessing a high proficiency in both technical and project management soft skills competencies are indeed better prepared to enter the working world.

In a related study by Lee and Tan (2003), the principal soft-skill gaps identified in our Malaysian engineering graduates were attributed to skills, such as, interpersonal communication, project planning/ scheduling, people management, problem solving and team management, which were also found to be highly valued by leading organizations in Malaysia. All these categories of skill attributes are inter-related, inter-linked and they interact with each other when it comes to the execution of a successful project. The following paragraphs describe these skill attributes as summarized by *Lee and Tan (2003)*.

Interpersonal communication was listed as the most important skill attribute for a graduating engineer to possess since employers considered this skill attribute as necessary for an engineer to conduct negotiations, to participate as members of the team, to interact with various types and levels of people, to serve and meet customers expectations, to work well with a wide variety of people and to resolve conflicts maturely. For example, employers want their hired graduates to be able to follow as well as to give clear instructions, speak clearly, and be able to make effective presentations.

Project planning and scheduling ranked second, possibly because this skill attributes are needed at different points in the life cycle of a project. For example, some graduates may be involved from the beginning in selecting and formulating a project, forming the team, negotiating the contracts, developing and executing project plans, budgeting, resource allocation and management, human relations, and negotiations.

For other types of skill such as people and team management skills, graduates need to acquire skills that include the ability to organize, inspire and empower their sub-ordinates and co-workers, as

Interpersonal communication was listed as the most important skill attribute for a graduating engineer to possess since employers considered this skill attribute as necessary for an engineer to conduct negotiations, to participate as members of the team, to interact with various types and levels of people, to serve and meet customers expectations, to work well with a wide variety of people and to resolve conflicts maturely

well as practicing good listening skills and keeping an open mind to promote the generation and flow of creative and innovative ideas. For example, soft skill attributes such as people management were seen as important for building good working relationships within a project team, keeping the project moving, establishing clear expectations with customers, identifying potential problems and soliciting suggestions to improve project performance. In addition, people from various disciplines and parts of the organization who have never worked together are assigned to the project for different spans of time. Developing a project plan without engaging the team appropriately can lead team members to ignore the plan and create mistrust and conflicts within the team. Indeed, all the best equipment and business processes will only guarantee success if accompanied by a team spirit with effective interpersonal communication processes.

Problem solving skills recorded the least variability of the principal skill attributes listed. The type of problem solving skills required in engineering projects as sought by employers included the sub-skill areas of problem identification and formulation, evaluation of alternative solutions and recommendation, uncertainty analysis by weighting risks and benefits, modelling, and qualitative analysis.

These skill attributes can be consistently built and developed into other subjects and practiced throughout the duration of an engineering degree program. This can be achieved if engineering educators systematically integrate skills development into their engineering curriculum. Engineering students should also be encouraged to obtain the needed skill attributes through a structured and well-planned industrial training internship program, class and final year projects, and involvement with student, professional or other campus organizations. On the job training for graduates that lack the essential entry level job skill competencies can be very costly and time consuming. The current employers' practice and preference is to recruit graduates who have a solid foundation of both technical and non-technical skills who can do a number of different things that adds more value to the bottom line and also because they are easier to train.

Therefore, completeness in the training of engineers is necessary in preparing engineers who are capable of performing useful functions in the industry, and these include emphasizing communication, management and innovative thinking skills *(Johari et al, 2004)*.

Here in UNIMAS, the Faculty of Engineering has started implementing the **'Outcome-Based Education' (OBE)** program in line with a new guideline from the Engineering Accreditation Council (EAC). A series of workshops on OBE for the engineering lecturers were conducted to familiarize them with the paradigm shift. It is important to implemented OBE because the EAC has been admitted as a provisional signatory to the Washington Accord in 2001, an international agreement among the members *(USA and UK amongst them)* to recognize each other's engineering graduates *(White, 2001)*. This implies that in the near future, professional engineers from one member nation will be allowed to practice in any of these countries. Thus, EAC has redefined its accreditation procedures and manual in order to meet the Washington Accord requirements, and as such, the engineering faculty is following the OBE requirements of EAC in order to obtain accreditation for its engineering degree in the future. The objective of the OBE program, among others, will let our engineering graduates to produce practical results, a demonstration that they are able to do something with their knowledge and experience acquired from the engineering faculty.

It is hoped that our graduating engineering students are able to solve problems creatively using all their knowledge base, skills and abilities, information and tools, and capable of working either alone or in teams while communicating ideas effectively and following the engineering ethics.

Acknowledgement

This article has been adopted from Lee and Tan (2003) and Johari et al (2004) with input on OBE from the Malaysian Dean Council of Engineering and the Higher Education Department, Malaysia.

References

Lee, F.T., and Tan, J.H., Project management skills demand for engineering graduates in Malaysia, Jurutera (IEM Bulletin), June 2003, pp. 16-25.

Johari, M., Osman, M.R., and Abdullah, A., Malaysian engineering education model – a glance, Jurutera (IEM Bulletin), June 2004, pp. 25-28.

White, J.A., Defining the knowledge economy, ABET Annual Meeting, Incline Valley, Nevada, USA, November 2001.

ENGINEERINGandOBE


text • inspiration

Dr. Mohammad Ibrahim Safawi & Dr. Azida Rashidi

mzmibrahim@feng.unimas.my
razida@feng.unimas.my

Background of OBE

At first glance, one might thought OBE to be the Order of the British Empire. That would be nice to have one. Unfortunately, in the realm of Engineering Education, OBE has been the new `ghost' word. Everyone talked about OBE, being introduced to OBE, changed to OBE, prepared courses according to OBE, to learn and apply OBE in his or her teaching. OBE, in the present context, is the acronym of "Outcome Based Education".

In 1989, eight countries have signed a multinational agreement called *The Washington Accord* (WA). These signatory countries were Australia, Canada, Hong Kong, Ireland, New Zealand, South Africa, United Kingdom and USA. This accord recognized the substantial equivalency of accreditation systems of organizations holding signatory status, and the engineering education programs accredited by them. In other words, all graduates of engineering programs that have been accredited in a member country are considered already fulfilling the academic requirements to enter engineering practice in all countries signing the agreement. For example, a graduate from a South African university is also equally recognized in the United Kingdom or USA. One can look at it as a *mini* globalization at the level of Engineering Education.

In 2001, Malaysia applied to be a provisional member of the WA. The signatory organization representing Malaysia was the Engineering Accreditation Council (EAC). EAC is comprised of four main organizations related directly or indirectly to engineering education in Malaysia. They are the Public Service Department (PSD), Board of Engineers Malaysia (BEM), Lembaga Akreditasi Negara (LAN) and Institute of Engineers, Malaysia (IEM). EAC has been the main body responsible for engineering accreditation in all institutions in Malaysia. The sponsors for accepting Malaysia to be provisional member were The Institute of Engineers, Australia (IEAUST) & Engineering Council, UK (ECUK). Prior to the acceptance as provisional member, the sponsors were invited to visit UiTM, UIA and Monash University, Sunway Campus to gain a first-hand knowledge of the level of teaching, curriculum and administration of engineering courses in these institutions. The outcome of their visit was the acceptance of Malaysia as a provisional member in June 2003. Other provisional members include Germany, Japan and Singapore. Being provisional members of the WA, Malaysia has been assigned mentors to assist her to attain full membership. Our Mentors are IEAust, Accreditation Board for Engineering and Technology (ABET, Inc) USA and Hong Kong Institution of Engineers (HKIE). Amongst the proposed activities by EAC for preparation to join WA as full member included an overhaul of EAC manual for accreditation, driving a culture change to prepare local institutions, and finally to apply for signatory status. If all goes well, Malaysia should be a full signatory member by June 2007. The Mentors first came to Malaysia in July last year and visited UKM and MMU this time round. They came up with some *homework* to do. There were several recommendations made, but the most important one was to reinforce key requirements of the accreditation systems. This called for additional emphasis in the accreditation manual on the need for an Outcome-Based Education (OBE) approach to educational design, for the learning associated with exposure to professional practice and for establishing a broad quality system that engages all staff and other stakeholders in a process of continuous quality improvement. In short, we have been requested to embrace the OBE approach.

What is OBE?

OBE is an educational process, which is based on trying to achieve certain specified outcomes in terms of individual student learning skills/abilities. First of all, we will have to decide what are the key things that students should understand and be able to do or the qualities (skills) they should develop. Both education structures and curricula are then designed to achieve those capabilities or qualities. Educational structures and curricula are regarded as *means* and not *ends*. The main

target will be the skills of the graduates when they finished their study and start developing those skills in their working life several years after graduation.

When it comes to learning outcomes the Ministry of Higher Education sets out a guide on the outcomes achieved by students undertaking honours bachelor's degree. *Table 1* is part of the handout distributed during the recent Accreditation Workshop held in Kuala Lumpur in March 2005. Along with the skills required, the stipulated number of hours needed to achieve those learning outcomes was also stipulated. An estimated 4800 hours was given as the minimum allocation for a student to gain those skills. Based on that estimated hours, it would be expected then that each student would spend 42 hours of study per week or 8.5 hours per day. Out of those 8.5 hours, probably the student will spend 5 hours attending lectures or laboratory sessions and the remaining 3.5 hours for self-study or assignments. Theoretically, any student doing less than the estimates would not be able to develop those skills properly.

Contrary to OBE, as has been practiced for so many years, our engineering education has been termed as *prescriptive-based*. Frankly, the term was picked up from the same Accreditation Workshop mentioned earlier. Since most of the participants were renowned professors and senior lecturers in local universities, one cannot but just agree with the term they used to describe our conventional system before this OBE. According to them, we used

Table 1 Learning Outcomes stipulated by the Ministry of Higher Education for a Bachelor's Degree

Learning Outcomes	Hours to achieve learning outcomes
Holders must demonstrate an understanding of a systematic and coherent body of complex knowledge and able to provide a basis for postgraduate study and professional careers	4800 hours (120 credits) If a students take 4 years to complete a degree, each year he takes 1200 hours In university, we have 2 semesters, so in each semester a student will take 600 hours. Since each semester is 14 weeks, approximately, a student needs to study at least 42 hours per week. Consider a student working for 5 days per week; everyday a student will study 8.5 hours. Say, a student has 5 hours of lecture per day, then he or she should be working another 3.5 hours after lecturer hours.
Holders must demonstrate a range of complex set of specified practical or psychomotor skills, including ICT skills	
Holders must possess necessary attributes to under take research, comprehend and evaluate new information and concepts from a range of sources, weight evidence, arguments and assumptions, for solving problems in many contexts	
Holders must be able to act in a professional manner and be ale to make sound judgments with a degree of cognitive autonomy	
Holders must possess oral, written and interpersonal communications and team skills	
Holders must be able to manage and use information as a foundation for self-directed life long learning	

to design what are necessary to be delivered to engineering students and convey them in lectures, tutorials plus laboratory works. The students' ability will be assessed through examinations and report submissions. Whether or not the graduates obtained the necessary skills is not the most important issue, as long as one completely covered all the prescribed topics to teach them.

Unlike OBE, the outcomes of the engineering education will be evaluated, preferably in terms of the skills acquired by the students themselves. If the structure and curriculum do not produce the required results then they are rethought or changed. In simple terms, product is more important than the process. Easy said than done. However, the whole process of shifting toward OBE approach requires a lot of time and work. Not that doing a lot of work is not good, but the whole thing is so new and involved massive documentations.

Embarking on OBE – The UNIMAS Civil Engineering Department's experience

Before embarking on the outcomes needed by our graduates, the first thing to set out will be the objectives. At this juncture, it is time to introduce another popular term in OBE – Program Educational Outcomes (PEOs). PEOs are broad statements that describe the career and professional accomplishments that the graduates will achieve. The PEOs are designed to describe the characteristics skills of some or all of the graduates several years after graduation. PEOs are responsive to the expressed interests of various groups of program s takeholders. Stakeholders can either be directly or indirectly involved in the education process. Direct stakeholders include UNIMAS policy-making body, faculty members, students, alumni or employers of graduates. Indirect stakeholders are governments (state or federal), professional societies, EAC and parents. All the learning outcomes from the courses offered by the department must be linked to fulfilling any of the PEOs. It hastens to be mentioned that PEOs are not the immediate results of the student's education in the institution but rather the graduate's development several years after starting working life. The Civil Engineering Department, with input from the Faculty and other stakeholders, had developed its PEOs. The PEOs has to be in line with the university's Mission and Vision. The Civil Engineering Program, UNIMAS has developed its PEOs as shown in Table 2.

Table 2 Civil Engineering Program Educational Objectives

PEO1	Uphold the professionalism, ethics and responsi bility of the Civil Engineering profession.
PEO2	Possess a general education and an understanding of the global demand of civil engineering markets and hence able to promote themselves in the international arena
PEO3	Extend their knowledge by independent learning and continuing education and contribute to the advancement of the profession through involvement in research and development (R&D) activities.
PEO4	Promote multicultural harmony and unity amongst different races and cultures by involvement in the technical and non-technical societies

Link between the UNIMAS Mission Statement and PEOs

The Civil Engineering PEOs has been formulated by taking into consideration the vision and mission of UNIMAS, as stated below:

Vision: To become an exemplary university of internationally acknowledged stature and a scholarly institution of choice for both students and academics through the pursuit of excellence in teaching, research and scholarship

Mission: To generate, disseminate and apply knowledge strategically and innovatively to enhance the quality of the nation's culture and prosperity of its people.

PEO1 and PEO2 aimed to promote the university worldwide by producing graduates who excel in their practice locally and internationally. The course syllabus should prepare our graduates to take up challenges in the international civil engineering job markets. They are expected to be practicable and employable by international firms and able to manage projects overseas. This by itself will promote UNIMAS as an institution of choice for students. At the same time, PEO3 should be able to fulfill the mission of the university to excel in the field of research. This is achieved by promoting academic staff to indulge in various research activities and at the same time transfer the skills to our undergraduates. The outcome will be two folds: university staff will contribute to the industry through their research activities and our graduates can apply their research skills towards the advancement of the profession. PEO4 was formulated after taking into account the racial matrix of the people of Sarawak particularly, and Malaysia generally. By considering the cultural scenario of Sarawak, the *home base* of UNIMAS, having various ethnicity and races, the learning environment should by itself be a venue to inculcate racial harmony amongst various races. Course curricula should promote inter-racial activities and contacts with the people and their interesting cultures inherent in Sarawak. UNIMAS alumni are expected to contribute towards racial unity and play a key role in this aspect.

Development of the PEOs

Amongst the constituents that contributed towards the development of the PEOs are:

- Current students
- Faculty members
- External Examiner
- Participants from Industry
- Institute of Engineers Sarawak Branch
- JKR Sarawak

1. Meeting the student session
A meeting was held by the department to meet the current student and gain feedback from them on the services offered by the Department. Their responses were taken into consideration when the department reviews their curriculum and course outcomes.

2. External Examiners
A study was made on the exit reports by external examiners who have come to visit the program. Amongst the contributors to these reports were:

- Dr W.H. Craig – Reader in Geotechnical Engineering, School of Engineering, University of Manchester, UK (Aug 1994)
- Prof. T.H. Hanna – Consulting Geotechnical Engineer, Sheffield, UK (Oct 1995)
- Assoc. Prof Tan Kiang Hwee – National University Singapore (May 2002)
- Ir Gue See Saw – Geotechnical Consultant, (Dec 2003)

The external examiners have made extensive reviews of the syllabus and quality systems. Amongst the point to note include:

- Increase collaboration with industries in applied researches
- Increase in the number of student doing research projects
- Review of notes and taking inputs from industries
- Formation of toastmaster club to increase communication skills

3. Participants from Industry
On 26 March 2005, the department held a seminar for 110 engineers from the various stakeholders. Most of them came from the government sector, consultants, contractors, suppliers and other agencies. A questionnaire was distributed to the participants to inquire on the skills most needed by the local industry from our graduates. Those skills were divided into 6 categories, namely:

- Construction
- Design
- Management
- Computing
- Communication, and
- Research and Development

The results of the survey are graphically shown in Figure 1.

4. Dialogue with Institute of Engineers Sarawak Branch (IEMSB) and JKR
A meeting with the Chairman of Institute of Engineers Sarawak Branch and his committee members were held at JKR Headquarters on 28 March 2005. The meeting was originally aimed to hear the views of the IEMSB on the civil engineering program curriculum that our department is reviewing. The following points were highlighted from IEMSB and JKR.

- The need to establish the project life cycle that take consideration of local climatic conditions.
- The importance to establish a series of publications or text books on civil engineering that is relevant to Malaysian climate and cultures.
- The importance of conducting more research on locally available materials for construction
- Further improvements of the present available Standards.

5. Faculty members
The concept of Outcome Based Education (OBE) was first promoted to all faculty members in the Faculty Academic Committee Meeting on 12 March 2005. The significance of adopting OBE in the course curricula was emphasized and the fact that Malaysia is preparing to be full member of

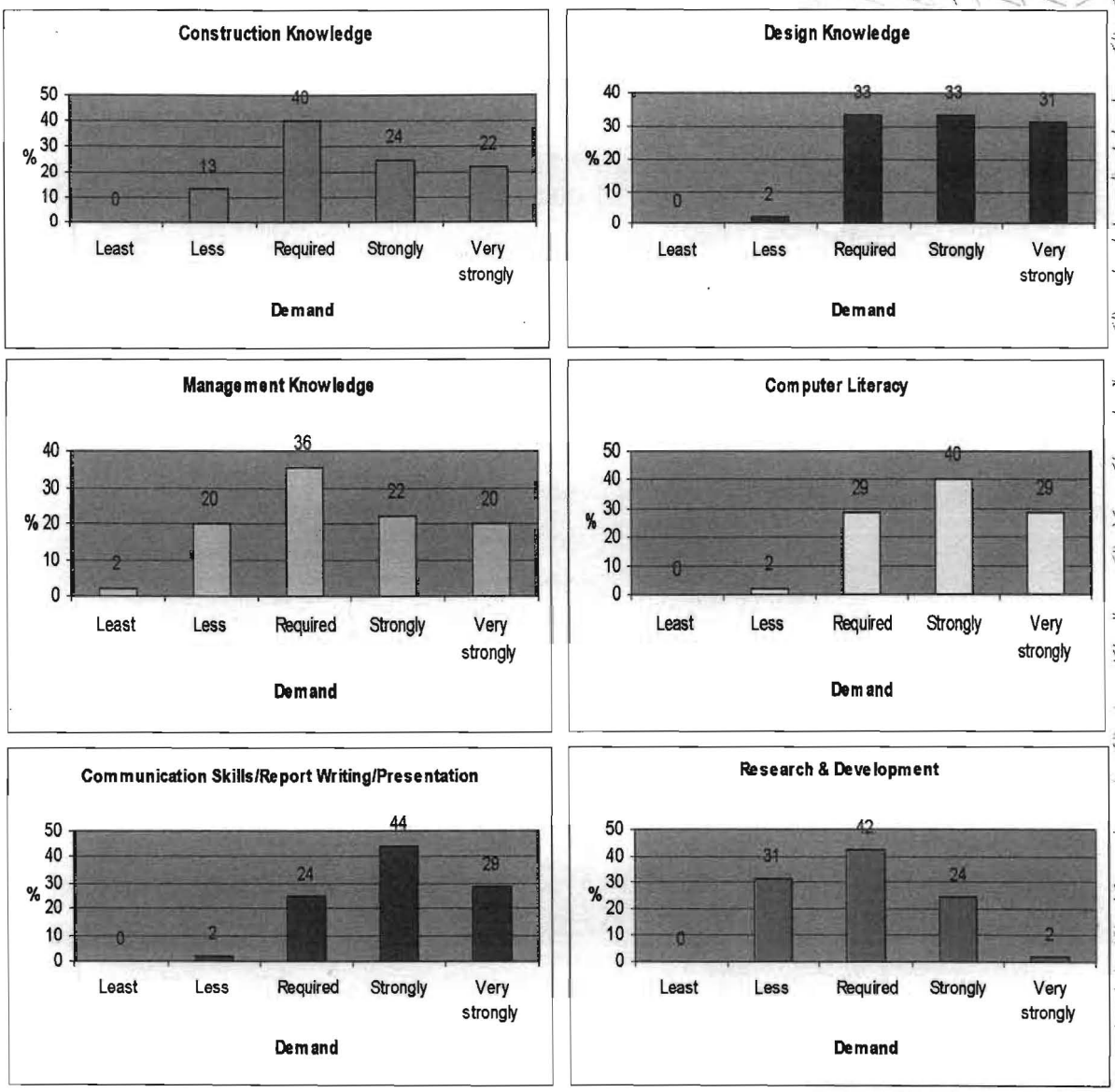


Figure 1 Results of the Survey

the WA was explained. This was necessary to promote awareness amongst staff members and keep everyone up-to-date. Hitherto, two series of OBE workshop was held with the aim of bringing OBE awareness amongst staff and to receive their feedbacks.

A meeting was called on 6 April 2005 to formulate the draft copy of the present PEOs. The outcome of that meeting was the compilation of the PEOs as shown in Table 2, above.

What's next?

Having established the PEOs was not the end but rather the beginning. A special committee will be formed in the department to develop the framework for strategic planning. This committee will need to produce a system of ongoing evaluation that demonstrates achievement of these objectives and uses the results to improve the effectiveness of the program. The proposed strategic plan shall formulate objectives in four basic areas, namely, Instructional, Research, Service and Quality Improvement Objectives. The Strategic Plan can be reviewed and updated for progress and achievements every two years.

Conclusion

There are yet more to OBE than what has been mentioned. Particularly the Program Outcomes (PO), its assessment and linkages, Professional Components, Faculty and Facilities are all areas that need redress. Time and patience are two keywords in restructuring and implementing OBE into our present system. For all these fuss and more fuss to come in the near future, it is hoped that UNIMAS civil engineering graduates will be well prepared for the challenges in the global markets.

Photograph contributed by Prof Mohd Syafiq Abdullah, FPSK

>> **AQA Workshop 1/2005 on 26-28 May 2005 at Unimas STAFF Training Centre, Bau**

V
V

Participants of the Postgraduate Diploma in Teaching & Learning Cohort 3

Events @ UNIMAS

- Competency Level Assessment Course Kursus Penilaian Tahap Kecekapan (PTK). **30 July - 4 September 2005**
  Organised by: Centre for Applied Learning and Multimedia
- **teach2005** - 'Teaching Science & Mathematics in English: Tying up Loose Ends'. **27 & 28 July 2005**
  Organised by: Faculty of Cognitive Sciences and Human Development
- BORNEO-KALIMANTAN INTER-UNIVERSITY CONFERENCE ON - "Social Transformation in Coastal Communities of Borneo" Konferensi Antar Universiti Di Borneo-Kalimantan Ke 1 - "Transformasi Sosial Masyarakat -Masyarakat di Daerah Pesisir Borneo-Kalimantan". **29-30 August 2005** Organised by: Institute of East Asian Studies
- Persidangan Kaunseling Kebangsaan 2005 : Kaunseling Dalam Pembangunan Organisasi dan Komuniti. **28 - 30 September 2005** Online Registration is now open. Organised by: Faculty of Cognitive Sciences and Human Development
- ASIA PACIFIC MARKETING CONFERENCE 2005 (APMC 2005). **22-24 November 2005**
  Organised by: Faculty of Economics and Business
- International Conference on Natural Resources and Environmental Management 2005 (NREM 2005). **28-29 November 2005** Submission of abstract: 15 September 2005 Submission of Full Paper 30 October 2005
- International Conference on Applied & Creative Arts (ICACA) 2005. **5 December 2005**
  Organised by: Faculty of Applied and Creative Arts
- CITA'05 - 4th International Conference on Information Technology Asia 2005
  Pervasive and Ubiquitous Computing: Computing Anytime, Anywhere for Everyone. **12– 15 December 2005**
  Full paper due : 16 August 2005 Organised by: Faculty of Computer Science and Information Technology
- 2nd Regional Workshop Computational Fluid Dynamics (CFD2005). **19 - 22 December 2005**
  Pre-Registration due date : 12th Dec. 2005 Workshop Dates : 19th – 22nd Dec. 2005